DOCUMENT RESUME

ED 400 848 IR 056 163

AUTHOR Lupton, Paul
TITLE Facilitating the Integration of Information Technology into the Primary Curriculum: Part of the Teacher-Librarian's Role?
PUB DATE 96
NOTE 10p.; In: Sustaining the Vision. Selected Papers from the Annual Conference of the International Association of School Librarianship (24th, Worcester, England, July 17-21, 1995); see IR 056 149.
PUB TYPE Reports - Evaluative/Feasibility (142) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Computer Uses in Education; Educational Cooperation; Educational Technology; Elementary Education; Foreign Countries; *Information Technology; *Integrated Activities; *Librarian Teacher Cooperation; *Library Role; Professional Development; School Libraries; *Teacher Attitudes
IDENTIFIERS *Teacher Librarians

ABSTRACT

This paper examines information technology and learning; the role of the teacher-librarian and resource services in relation to the technologies; and the perceptions primary school teachers have of teacher-librarians in the integration of information technology into classroom programs, with an emphasis on the factors that facilitate the integration. A study of teachers (n=167) in 25 primary schools surveyed teacher perceptions of the teacher-librarian's role in the integration of information into large primary schools. Distribution of users, access to information technology, the place of the teacher-librarian, and ways the teacher-librarian was or could assist with the integration of technology in the classroom were all examined. Information technology has expanded the role of the teacher-librarian considerably, necessitating the assessment of human resources for school library information services in addition to the material resource concerns. Teacher-librarians must continue to work with teachers and administrators to keep school library resource services an integral aspect of the learning environment. In addition, teacher-librarians and their employers must continue their professional development to enable them to provide leadership for curriculum implementation which addresses the challenge of information technology. (Contains 12 references.) (Author/SWC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 400 848

Facilitating the Integration of Information Technology into the Primary Curriculum: Part of the Teacher-Librarian's Role?

Paul Lupton, Lecturer
School of Language and Literacy Education
Queensland University of Technology

Abstract
After examining the current challenges with which information technology confronts learning, this paper will address the role of the teacher-librarian and resource services in relation to the technologies. The paper will then ex-amine the perceptions primary school teachers have of teacher-librarians in the integration of information technology into classroom programs, with the latter section being based on the author's research into those factors which facilitate the integration

Introduction

Changes in technology affect the roles of professionals in all walks of life and schools are no different... For school librarians, the immediate future will see their role as being increasingly linked to technological developments in the school library and within the school as a whole. (Herring, 1992: 140)

Three years on, there is ample evidence that Herring's prediction is the situation many Australian teacher-librarians find them-selves faced with, for most secondary schools and the majority of larger primary schools use auto-mated library catalogues, run CD-ROM data-bases and software, dial into external information services and are now joining Internet providers in droves. And why not, for as Clyde observed, "no other department in the school can demonstrate as many examples of information technology in action as the school library' (1987: 9).

The speed with which this technology is being adopted in schools is placing enormous pressure on education bureaucracies and universities to provide relevant levels of policy, resourcing, support and training. The current response at state and national government levels is to announce relatively large funding initiatives to support the integration of information technology across the curriculum.

For example, in Queensland, the government is providing $40M for the Computers in Schools Project and related programs over three years with up to 20% of Primary Computer Program funds being available to schools for teacher professional development. The Queensland program to support the integration of information technology into the curriculum also includes several publications and videos aimed at supporting teachers with this integration. In the Northern Territory primary schools will receive $2 for every $1 raised for computers and software within the limits of $3000 granted to each of the larger schools and $1500 to smaller schools.

At the national level we see emerging plans for collaboration between the common-wealth and state governments and education providers at all levels to develop EdNA (Education Network Australia) which will provide, universal access (to the Internet) so that all Australians, whether they live in remote localities or cities, will be able to access the network for the cost of a local call (DEET, 1995: 1).

In such a climate it is important that schools examine the learning needs of their school communities and make responsive and responsible provision for the integration of these and future technological developments to ensure that the planned outcomes of their curriculum programs continue to provide for the needs of learners.

Information technology and learning

As a skill to be developed across the whole curriculum, it is vital that the delivery of information technology (IT) in schools is carried out in a planned, organized manner. (Chapman, et al, 1993: 3)

Successive generations of learning tech-have been viewed with suspicion or as a threat by many teachers, almost, it seems, as if to disprove the benefits pronounced by those introducing the various technologies. While specific methodologies have evolved for effective applications of each

IR056163

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Ken Haycock
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

technology to learning, it has to be said that few learning technologies enjoy universal application in the majority of learning environments - apart from pens, pencils, books and blackboards or their equivalents. As Bates (1994: 39) observes, "to date, while many examples of successful applications can be cited, educational technology has had marginal impact on education and training."

My observation about this lack of impact, centers on time and access to the technology, and therefore points to the need for more realistic resourcing of education. To be successful with technology teachers require time to learn about it and time to experiment with and refine its application so that they will be competent and confident to implement appropriate uses of the technology in the learning environment. (See Russell below.) Collaboration is another important condition for appropriate use of technologies. The time and collaboration factors will be emphasized later in this paper.

The previously mentioned abiding technologies of pens, pencils, books and blackboards are the relics of teaching by transmission, a methodology which is now challenged by current and emerging information technologies which enable the learner to exert much more control over the content, the means and the pace of learning. I wait with interest to see the learning environments which our present cohort of children create when they become teachers. Having grown up in the era of information technologies I hope that they will use these tools as comfortably as print-based material is presently used.

The use of information technologies brings us much closer to the goal of individualizing programs. This is one of the challenges of information technology to the fundamentals of learning. Information technologies provide the means for the underlying principle of open learning of, "freedom and diversity of learning options for the student" (Lundin, Sandery and Evans, 1994: 1), or, to put it another way, Bates (1994: 39) maintains that, "technological developments already available or in the pipe-line have the potential to revolutionize education and training as we know it, far more so than the technologies used to date."

Following a major project in the United Kingdom, James Herring, a prolific writer on technology in school libraries in the UK, found that information technology, "can assist in developing pupil autonomy in learning but in order for this to be achieved, pupils need to work in an environment conducive to learning and teachers need to reexamine their classroom role in relation to IT (information technology)" (1992: 6).

This re-examination of the teachers' role is made clear in an edited interview with Alan November published in *Electronic Learning*. November, a national technology consultant in the United States, makes a number of important observations about the need for teachers to change their roles in relation to learning. Some of November's suggested changes are:

- For teachers, perhaps the most difficult job change will be (that) we'll no longer be at the center of learning for our students. We'll become brokers - connecting our students to others across the nets who will help them create and add to their knowledge in a way that one teacher alone could only dream of.
- This technology will reorganize almost every-thing about the culture of schooling ... Of course good teaching like good farming, is dependent on the people working with the equipment, and now is the time to develop a new vision of education.
- Up until now technology has not had much impact because we have not created a new vision. But what makes change inevitable now is, because of the superhighway, schools will no longer have a monopoly on students' time and access.
- I am trying to make a case here that we have to reconsider every cultural angle - funding, teacher training, role of parents, jobs of kids, certification of administration, assessment, relationship to community - because of the potential of the new technology to create a real *public* school system.
- The Net will mean that we need to develop new skills of collaboration among teachers. I am predicting that new kinds of companies will provide holistic educational services on the Net. As a country we need to make sure that all students have equitable access to these providers. (Adapted from November, 1994: 24, 25&94)

I'm sure November's suggestions sound familiar to many librarians and teacher-librarians, for brokering is an important part of their work, as is the people side of service delivery; the development of a vision or mission; and the development of collaborative partnerships. Unfortunately, it is a new way of thinking for many teachers - at all levels.

It is a pity that we do not have more people of the calibre of Norman Beswick who in 1987 in his landmark text on active learning asserted that, "new information technology gives a marvelous opportunity for all of us to rethink the education system and its priorities, and to reexamine some long cherished hopes and objectives." (1987: 92).

So, if November's way of working may not seem particularly new to teacher-librarians and if Beswick's challenge is to be realized, does the acquisition and use of information technology present a challenge for them? To answer this in part, I would like to examine the role of the teacher-librarian as described in *Learning for the Future*.

The role of the teacher-librarian and in-formation technology

Learning for the Future published in 1993 by the Curriculum Corporation for the Australian School Library Association and the Australian Library and Information Association examines the role of school library information services as encompassed by the five interrelated domains of:

- learners and learning;
- teachers and teaching;
- resourcing the curriculum;
- providing access to information; and
- developing the physical environment.

To provide guidance for a planned approach to the implementation of responsive information services *Learning for the Future* details a cyclic process which school communities develop to ensure that policies, priorities and resources are adequate for the provision of information services which are responsive to the needs of the school's curriculum and its teachers and learners. The proposed cycle of development has four steps : (1) analysis of need; (2) developing policy; (3) implementing policy; and (4) evaluating outcomes.

To further assist the process, a set of guidelines and indicators is provided for each of the five domains.

Examples of the guidelines and indicators concerning teachers' and teacher-librarians' use of information technologies include:

- time is provided for teachers to preview curriculum resources with teacher-librarians, ensuring the integration of information resources and technologies into teaching pro-grams and student access to the best possible resource support;
- training opportunities are available for teachers and teacher-librarians in the latest information and telecommunications technologies and their use in curriculum contexts;
- teachers receive assistance and guidance in using information technologies to locate and retrieve information and in developing skills needed to use the library resource center's systems, services and equipment to maxi-mum advantage ;
- technology is used to provide access to information both within and beyond the school; and
- in addition to curriculum-related professional development, teacher-librarians are given opportunities for continuing professional development relating to developments in information retrieval, information technology, in-formation management systems and librarianship.

These guidelines clearly demonstrate that the presence of information technology continues the resource and curriculum-related role of teacher-librarians through the provision of information, guidance on the curriculum applications of the technologies, working with teachers for the implementation of learning programs, and through their leadership and the training provided for teachers. There is also a clear obligation on their employers to ensure that adequate professional development is delivered.

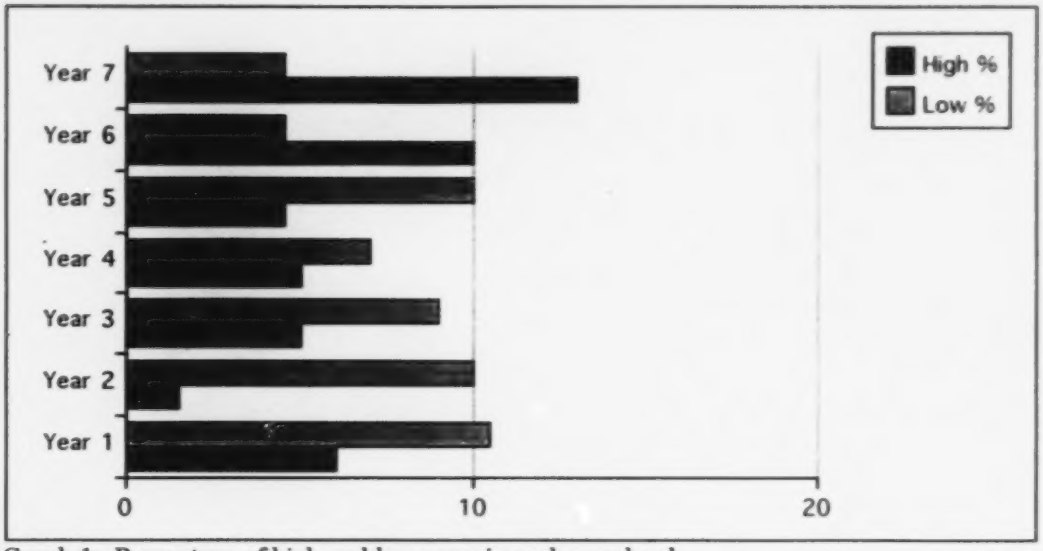
Nonetheless, do teachers view teacher-librarians as having a curriculum role with information technology? The next section examines the preliminary results of research into teachers' perceptions of those factors facilitating the integration of information technology into their classroom programs.

Teachers perceptions of the role of teacher-librarians in relation to information technology

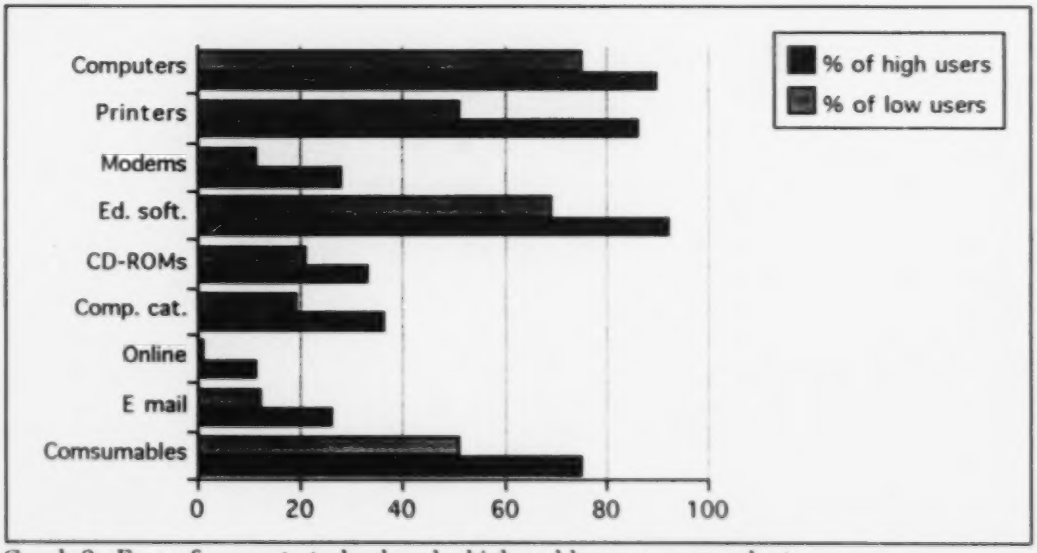
As part of a much wider study to ascertain those factors which facilitate the integration of information into large primary school, that is schools with teacher-librarians, I have been able to obtain teachers' perceptions of the teacher-librarian's role in this integration. The study, based on a self-completed questionnaire, includes data from 167 teachers in twenty five primary (elementary)

schools with an enrolment ranging between three and nine hundred students. In Queensland, primary schools are eligible for a teacher-librarian once the enrolment has reached three hundred. Unfortunately very few primary schools have more than one teacher-librarian.

From the data it was possible to classify the teachers into high or low level users of information technology according to the frequency with



Graph 1: Percentage of high and low users in each year level



Graph 2: Ease of access to technology by high and low user respondents

which they integrated information technology into their classroom programs.

Distribution of users

The distribution of high and low users across the participating schools displays a significant imbalance. From Graph 1 it can be seen that while half of the high users are teachers of Years 6 and 7 (51% of the high user group), an almost identical proportion (53%) of teachers from Years 1 to 3 are classified as low users of information technology.

Access to information technology

One of the factors which determined teachers' level of use of the technology was the degree of access they had to equipment and software.

A comparison of the data describing the easily accessed items in Graph 2 shows that the high users have far less difficulty in accessing all of the items than do their low user counterparts. The low users have particular problems with accessing printers and consumables by comparison with other teachers in their schools. With the more recent technologies, the high users have a significant advantage over the low users as the former have over twice the chance to access modems and electronic mail, and almost twice the access to a computerized library catalogue. This disparity is clearly demonstrated in graph 2.

The place of the teacher-librarian

Two items in the questionnaire gave the respondents the opportunity to describe ways by which teacher-librarians can be part of the integration of information technology into their classroom programs. The first was related directly to teacher-librarians and the second was when describing the kinds of support any member of staff had given. Discussion of the ways that the high and low users viewed the role of the teacher-librarian follows.

High Users Group

Ninety percent of the high users group wrote responses describing ways their teacher-librarian was or could assist them with the integration information technology into their classroom programs. Their responses have been grouped under the following headings and ranked in descending order according to the number of responses under each heading. A sample of the relevant responses is also given.

- Already doing it
  - Does all he can -- probably more than he should;
  - Our teacher-librarian does a great job sup-porting the integration of information technology;
  - I don't think the TL could do much more than she is doing now.

  Other comments in this category described the way the teacher-librarian was assisting teachers. For example:
  - Currently keeping me informed on new software, familiarizing children with new software and computerizing catalogue;
  - The teacher-librarian is always prepared to support me with familiarization of programs or introduce programs to the class . . .
- Providing services
  - Storage of programs, control and recording of borrowings;
  - If the teacher-librarian had a telephone line for setting up access to telecommunications;
  - To allow children access (with supervision) to programs for extension or remedial purposes;
  - If there were computers in the library children could access them for information, e.g., CD-ROM.
- Becoming familiar with information tech-
  - Should become familiar with software and be able to suggest applications in certain areas;
  - By having a knowledge of the program -- if I see it demonstrated I feel more confident.
- Conducting inservice
  - Showing us how new programs work;
  - By running more sessions to help teachers become more confident themselves thus integrating computers into their own programs in the classroom;
  - Inservice on particular software packages.
- Working with teachers
  - Be able to suggest applications in certain areas;

- The teacher-librarian should show catalogues and buy what grades require and inform teachers when it arrives. Teachers should get together with the teacher-librar-ian and run through the program; and
- Providing back up resources.

• Selecting new programs
- The teacher-librarian should show catalogues and buy what teachers require and then inform them when it arrives; and
- To research and access suitable programs for classroom use.

• Isn't the teacher-librarian's role
- I'm not sure that I think it's their job;
- It's up to the class teacher to make them-selves familiar with programs;
- The teacher-librarian cannot be expected to know all the software and books.

• Teaching children skills
- Lessons on use of programs;
- Familiarizing children with the new soft-ware.

• Promote the availability of materials
- Help with making software packages known;
- Keep me informed on new software and its usefulness.

• Not currently possible
One teacher expressed the view that "because of our limited budget I doubt if she (the teacher-librarian) could at present."

Low User Group

Responses on how teacher-librarians can support teachers with the integration of information technology into classroom programs were made by 83% of the low users.

The responses have been grouped under a similar set of headings to those used to classify comments of the high users, again ranked in descending order according to the number of responses.

It is interesting to note that 21% of the responses from the low users are framed in negative terms and generally indicate that the teacher-librarian is not seen as useful in supporting the integration of information technology into classroom programs. The grouping of responses from the low users follows.

• Working with teachers
- Cooperatively plan to include information technology into the classroom;
- Helping us to find out data packages to be integrated with theme work;
- Could be more supportive of classroom pro-grams;
- Work in class and does if asked; and
- Knowledge of, and help with, selecting suit-able programs for theme work.

• Promote and provide lists of materials
- Pass on information as to what is avail-able and how it could be used;
- List software available for my year level;
- Newsletter on new programs bought and their suitability to particular year levels; and
- Disseminating information computer pack-ages and their use in the classroom.

• Teaching children skills
- More regular library lessons;
- Perhaps set a model and demonstrate various uses or programs in usage during library lessons;
- Teach children uses related to areas being studied;
- Introduce and use programs with small groups of children;
- Come out of the library and work in the classroom during activities.

• Providing services
- Use of CD-ROM for research;
- Have a computerized system to help students and teachers access resources;
- Catalogue of programs in an easily accessible way;
- Installing technology into the library for our use and demonstration purposes.

• Not possible.
- I don't think the T.L. **could** at all effectively. The computer literate teachers would have far more success in giving teachers and students support;

- Does not indicate this as role -- sees library as domain but not classroom; and
- I could not see the TL doing any more especially in line with the other duties carried out.

• Conducting inservice
- Demonstrate rather than explaining its use;
- The Teacher-librarian would need to be inserviced as well; and
- Have more personal inservice to gain confidence to impart knowledge, etc.

• Isn't the teacher-librarian's role
- I'm not sure that I think it's their job;
- The teacher-librarian cannot be expected to know all the software and books; and
- Because of our limited budget I doubt she could at present.

• Unsure
- I don't know. She is already very busy. An-other twenty four hours each day should do it.

• Becoming familiar with information technology
- Our teacher-librarian is not computer literate; and
- Learn more about computers and software in school.

• Selecting new programs
- updating of software available based on knowledge of needs of different year levels.

• Management system
- reorganize the whole system to make every-thing easy -- no hassles.

• Already doing it
- I find the teacher-librarian doing a great deal of work in cooperative planning and teaching, involving use of computers.

• Other comments

One teacher proposed that a teacher other than the teacher-librarian is needed to support the integration of information technology by stating "another teacher should be appointed to specialize in computer technology as the technological advances make it impossible for the already overloaded classroom teacher to keep up."

Other responses from the questionnaire

The respondents were asked to describe ways by which they had been supported by other members of staff. For the purposes of this paper I have extracted the data pertaining to teacher-librarians. A summary of the data from the two level of users follows.

High user group

While the high use teachers indicated many ways by which they had received help from colleagues at their school they indicated that their teacher-librarian had given them support in the following different ways.

- Introduced CD-ROM;
- Problem solver;
- Supportive ;
- Makes information available ;
- Introduced programs;
- Provides software ; and
- Installing equipment.

Low user group

Despite the number of negative comments made about teacher-librarians in the low users specific statements on teacher-librarians, it is obvious from the following group of comments that low users can recall a number of ways that teacher-librarians have provided useful support.

- Introduces software;
- Takes small groups on computer in library;
- Sets up computers;
- Showed use of computers;
- Computer coordinator;
- Helpful guidance and assistance;
- Cooperative planning;

- Problem solver; and
- Approachable.

The above summaries of responses from the two groups of teachers give a clear indication of the ways teacher-librarians can work to pro-mote the integration of information technology across the curriculum. There is a need also to take heed though that some teachers do not have a view of teacher-librarians as valid in the area of information technology.

Two issues arise from this: teacher-librarians need continuing professional development to ensure that they are in a position to provide models and leadership for the teachers with whom they collaborate; and teacher-librarians must continue to take every opportunity to advocate the relevance of their role in curriculum development which responds to each successive challenge to learning.

Conclusion

To conclude I would like to return to the role of the teacher-librarian to illustrate the continuing need for advocacy to ensure the integration of information technology into the curriculum. In the context of the challenge that information technology presents to schooling it is worth reflecting on Ken Haycock's comment about the role, made originally in 1985.

> *The very nature of the role of the teacher-librarian is that of initiator and change agent. We talk of getting teachers to use the library when this is not the issue at all - what we are talking about is getting teachers to change the way that they teach* . . .(Haycock in Henri, 1988: 55)

Haycock is not suggesting a move away from the resource center although, in a recent Email communication with me, he is concerned that the apparent advantages of the Internet could cause teachers and administrators to overlook the importance of the range of equally valid information services which resources centers can also provide. What Haycock does indicate is that the school's information specialist must advocate to and with his/her colleagues to ensure that the totality of information services are considered in developing relevant learning programs.

Information technology presents a special challenge to teacher-librarianship for, unlike its effect on some work places, this technology has expanded the role to the extent that many teacher-librarians are unable to accomplish their duties or maintain up-to-date services despite their desire to do so. There is a clear need to address the material **and** human resourcing of school library information services.

Collaboration has always been an integral component of a teacher-librarian's success. In this era of information technology, teacher-librarians must continue to work in partnership with their teaching colleagues and administrators if school library resource services are to remain an integral aspect of the learning environment. It is through this collaboration that teacher-librarians are able to effectively articulate and demonstrate their needs and the needs of the school's information services, to ensure that these needs are understood not only at the school level but at the district and system's level as well.

In addition to this resourcing requirement, teacher-librarians and their employers must take responsibility for their continuing professional development in ways which enable them to provide leadership for curriculum implemen-tation which addresses the challenge of infor-mation technology.

There is too much at stake for the skill base and the support levels of teacher-librarians to be neglected.

References

Australian School Library Association and Australian Library and Information Association. *Learning for the Future: Developing Information Services in Australian Schools*. Melbourne: Curriculum Corporation, 1993.

Australia. Department of Education, Employment and Training. *Commonwealth and States Join Forces on Education and Train-ing on Information Superhighway*. Press release, 26 May 1995.

Bates, A.W. "The Educational Aspects of the Telecommunications Revolution," *Distance Education: Windows on the Future*, Keynote Addresses from ICDE/DEANZ Conference Wellington, 8 May 1994, pp. 39-51.

Beswick, Norman , *Rethinking Active Learning 8-16*. New York: Falmer Press, 1987.
Chapman, Colin, et al. *Information Technology: Teacher's Guide*. London: Collins Educational, 1993.
Clyde, Laurel A. In *Online Information Services for Schools: Implications for School Libraries*. Perth: Library Association of Australia, School Libraries Section (WA Group), 1987.
DEET. See: Australia. Department of Education, Employment and Training (1995)
Henri, James. *The School Curriculum: A Col-laborative Approach to Learning*. 2nd ed. Wagga Wagga: Center for Library Studies., 1988.
Herring, James E. *Information Technology in Schools: The role of the School Librarian and the Teacher*. London: Library Associ-ation Publishing, 1992.
Learning for the Future. See: Australian School Library Association and Australian Library and Information Association (1993)
Lundin, Roy, Peter Sandery and Beryl Evans. "Flexible Delivery". Adaptation of the Introductory Sections of *Flexible Learning Processes for the Delivery of Professional Development of Principals: A National Report to the Australian Principals' Associations Professional Development Council (APAPDC) for Project 1*. Unpublished paper, 1994.
November, Alan and David Thornburg. "Will the Superhighway Really Change Schools?" *Electronic Learning*, 13(8), May/June, 1994, pp 24, 25&94.